

Amendments to the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A computer tomograph for detecting rays that are elastically scattered in an object, wherein the object is present in an examination region and the scattered rays are scattered at different scattering angles, with
a radiation source for permeating the examination region with primary radiation, and
a detector with detector elements which lie outside the region permeated by primary radiation and whose effective dimensions become increasingly smaller in the direction of decreasing scattering angles.
2. (Original) A computer tomograph as claimed in claim 1, with absorption elements which each cover a portion of a detector element such that the region of the scattering angle that can be detected by the respective detector element is reduced.
3. (Original) A computer tomograph as claimed in claim 1, with a polychromatic radiation source and with a detector having energy-resolving detector elements.
4. (Original) A computer tomograph as claimed in claim 1, with a radiation source for generating a fan-shaped ray and with absorption lamellae arranged between the detector and the object, which lamellae lie in planes that extend parallel to the axis of rotation and subdivide the radiation fan into sections such that the detector elements present in a column parallel to the rotation axis are substantially hit only by primary or scattered radiation from one and the same section.

5. (Original) A computer tomograph as claimed in claim 1,
with a radiation source for generating the primary radiation either in the form
of a planar fan ray or a conical ray,
with a two-dimensional detector, and
with a first mode of operation in which a portion of the detector elements
receives the scattered radiation generated by the planar fan ray, and with a second mode of
operation in which the detector elements receive the primary radiation generated in the
conical ray.

6. (Original) A detector for determining elastically scattered rays, which detector comprises
at least one column comprising a plurality of energy-resolving detector elements, wherein the
pitch of their centers and their dimensions increase towards a maximum value in the direction
of the column.

7. (Currently Amended) A detector as claimed in claim 6, wherein the pitch of the centers of
two mutually adjoining detector elements g is defined by $g = a_{n+1} - a_n$, and it holds that:

$$a_{n+1} = \frac{a_n \left(1 + \frac{r}{2}\right) + s}{1 - \frac{r}{2}} \text{ where } r \text{ is a constant expressing the resolution of the scattering angle and}$$

s is the distance between two sensitive regions of mutually adjoining detector elements in the
direction of the column and

a_n is the distance from the center of detector element EL_n in the z-direction from a fan-shaped
ray generated from a radiation source, and

a_{n+1} is the distance from the center of detector element EL_{n+1} in the z-direction from the fan-
shaped ray.

8. (Currently Amended) A detector as claimed in claim 6, wherein $p_n = a_n * r$ where p_n is the
height of the nth detector element EL_n .

9. (Original) A detector as claimed in claim 6, comprising at least one detector element which is formed by a plurality of mutually adjoining sub-elements.